Teaching and Learning

TEACHING AND LEARNING INFORMATIONAL TECHNOLOGY PROCESS: FROM A 25 YEAR PERSPECTIVE-MATH REGENTS

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Abstract

This paper will describe the Teaching and Learning
Informational Technology Process (TLITP). Before
present day strategies, teaching and learning relied

on transformations based on quantification to measure performance. The process will be a non-linear three construct of teacher, student and community. Emphasizing old practices now is the emergence of transiting transmissions of ideas from educational programs and information communications. This paper will discuss New York State Regents exams using surveys to identify progress from five high schools, two Junior High Schools and two community school organizations. The paper contains the aspect of how technology used as a tool measuring achievement levels based on math proficiency and regent math exams. Does technology enhance student's achievement on the Math Regents?

I Introduction

The resources will attempt to prove that students exposed to computer literacy and have the use of a computer do better on math tests. What are we measuring? Does technology use improve student's achievement? What technology is appropriate for Professional Development?

Mathematics is a fundamental human activity - a way of making sense of the world. Yet, for many adults, the "sense making" of mathematics is lost. As educators, we need to provide experiences that continue to foster students' understanding and appreciation of mathematics. By providing mathematics, programs in which students explore and make sense of mathematical patterns and relationships. The process described will help students develop mathematical knowledge that allows them to solve problems and explore new ideas, in and out of the classroom. This paper will discuss how new ideas and concepts in mathematics help students achieve on the math regents exams. Students need programs and instructional approaches that will help them grow in their ability to use mathematics to make sense of their world. This paper will explain a process that will help students become math literate and research affects computer use has on achievement in mathematics. The research literature consists of mathematics' survey and a survey about technology use. The results will compile informationcollected data compared to national averages.

Relevant Literature

In a NYSED, study (2003-2004 p.2) of technology in the schools of the Mohawk Region New York the purpose was the impact on student achievement associated with a \$14.1 million investment in educational technology. Sample setting out of 55 school district's 4,041 teachers, 1,722 students 159 principals, 41 superintendents. Methods of data collection a teacher survey, principal's survey administrative data transfer of New York State PEP and Regents test scores findings for the schools that had the most technology and training for teachers, the overall increase in the percentage of students who do OK and pass the math regent exams was 75%.

Mohonasen senior High School

2002	56%
2003	64%
2004	88%

Table 1 Math A the state average for Mathematics A was 81% in 2004.

2004	80%
2003	83%

Table 2 Math B the state average for Mathematics B was 76% in 2004.

2003	57%
2002	86%

Table 3 Sequential Mathematics course III the state average for Sequential Mathematics, Course III was 50% in 2004

In overcrowded poorly funded schools, we have created a new dilemma called culture war, student achievement based on the comfort of teachers using technology, how much the student uses the computer, and achievement gains. According to R. Mills (2005, p.4) "Students should move to a curriculum culminating in a regent's exam." Students have improved their regents scores, but the ones who improve their scores have better communication skills pertaining to the database.

Over thirty years ago, technology began in the school system. Labs were set up to develop computer programming. The Modern World created a combination of advancements.

Today, with the rise of educational programs the role of computers has changed from a programming tool to a teaching and learning tool. The New World would not have prospered

without the emergence of education and mathematic quantification that measure the New Reality based on production of ideas.

The National Council of Teachers of Mathematics Principles (2001): Equity: Requires professional development of tools used as resources for everyone. Curriculum: A collection of coherent materials to provide increasing levels of knowledge and sophistication. Teaching: Effective mathematics teaching requires having knowledge of what students need to improve, supportive learning environment, and seeks continuous professional development based on their reflections. Learning: Students must understand their goals and develop fluency by problem solving, reasoning and argumentation. Assessment: Should target the kinds of performance and knowledge that should be valued and making decisions for further instruction. Technology: enhances and influences student learning. Not only does it support every area of mathematics, technology gives teachers an option for adapting instruction to special student needs.

Educational math Technology has advanced and communication yet have led us into the Golden Age in American Education. Old orders of education have moved to a new fluent one. Students use technology in math classes

to progress on their math regent tests. We are at the stage of growing and learning how to apply technology to mathematics. Society has an opportunity to access information over the internet in mathematics in different languages. Technology has increased productivity as well as a vast amount of interpreting and explaining skills.

One of the issues, which have arisen, is the use of technology in the classroom, teachers not having enough skills to appropriate integration of technology into math lessons. On the other hand, children who develop creativity are producers. By using TLITP, students who were once unproductive can grow and learn to use higher order calculating skills by learning with technology. TLITP (Teaching and Learning Information Technology Process) is necessary for success of High School students today. Does technology enhance student's achievement on Math Regents? Yes, Math Regent Exams are New York State tests students must take using a calculator. A mathematical tool such as a metric ruler - is initially too abstract for most students to learn through transmission. In the case of matrices, the level of abstraction is particularly challenging for students. A standardized step for calculation efficiency using calculators is better to figure. The calculator's

design supports the sense making expected from students now.

New York State public education acts in regions. Each region coincides with the vicinity of the school, except in suburban areas where there are different taxes, allocating funds to the schools, located there. Due to the many levels of funding for schools, the Board of Regents is in control of all educational activities and so being has required that regents exams taken to afford an equal opportunity education. When the urban high school answering how economics played a role, it remained a question of the means of economic status of the student's family, some student's parents cannot afford to provide them with supplies such as calculators. However, the school does provide them if needed. It becomes difficult to supply each student, because of budget constrictions.

Technology helps to get good grades on Math A and Math B Regents Exams as well as state tests. Hence, student's progress enhanced by using computerized correlation to determine area of achievements and what areas the student needs improvement. It is interesting how the use of technology can determine High School student's progress on the New York State Regent's Math Exams. Figure 1 shows measurement of Teacher training progress based on data from

the student's algebra assessment compared to student tests. In a similar study, the Secretary's Conference on educational technology (1999, p. 4) emphasized the importance of the need for professional development of teachers and administrators to integrate technology into the curriculum and receive professional development in school and in the community.

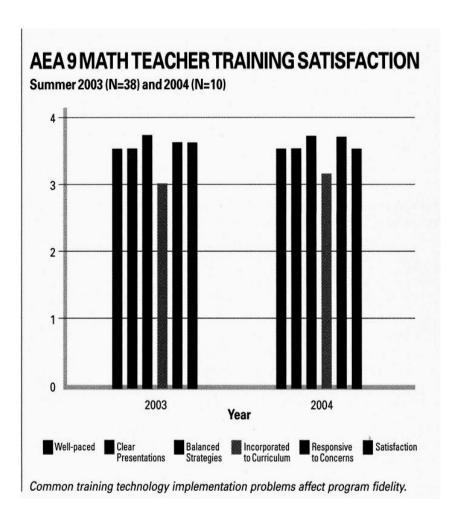


Figure 1: Math Scores as per Teacher Training

This is an example of computerized calculations based on given data. 1 Technology helps to be more accurate and eases frustration of inability to calculate problems that are time consuming. The data shows a relationship of how technology use improved learning. This occurred when there was a dependent variable: Student Learning, (Kulik, J. John Dewey's Democracy in Education discusses 2002). similar ideas teachers will not reform to the new strategies. Some teachers are afraid that technology will create dependencies. Addictions that pass old principles of education to the new are habits that become discrepant events. These habits will help us learn to be self sufficient and productive. Latin and Greek civilization principles have been conflicted by change in society. Today, the practice, instead of the intent to use, and manufacture a tool affects students in high school math classes. Methods of teaching have changed, but not the information.

Math regents have changed to apply to the new standards. To modify changes from integrated algebra to sequential math made it necessary to use calculators with regents exams. In the late 60's, calculators were not used

¹Rigeman, S., McIntire, N. (2005, July). Enhancing curriculum and instruction through technology. T.H.E. Journal, 32(12)pg. 31,3pgs. Figure 1.

on the Math Regents. Etch a sketch was used as a drawing tool in science. Now popular software used is sketchpad. Then, the teacher assumed the role as computer scientist. Science and math were the same language. The more sophisticated technology becomes, the more it is necessary to apply skills in technology a tool that will help to solve problems with the help of calculations.

The Texas Instrument 83 measures angles in degrees. When you measure an angle you convert, 25 degrees 7 feet and 30 inches back to decimal degrees by entering the angle and the calculator automatically gives you a decimal answer 25.125.(Titutorials, 2005). There are other methods to use the hand held graphing technology to establish the parameters on flash cards, so students know the relationship of y= and y- in order to factor which makes factoring much easier, although it isn't the only method of factoring you will need to teach factoring. (Laughbaum, E.2003). The need for the TLITP for math is when students graduate from high school they are able to provide for themselves; this is self efficacy in mathematics.

Today technology and math assessment uses a TI83 or TI86 graphing calculator. The methodology of assessments is to test the skill of using technology instead of the

practice. Problems created too hard for any human being to solve without a calculator, are too large to calculate in your head, a computer has more advance abilities to figure quickly. Technology helps to get the right answer with more certainty and less stress of knowing if you have the right answer. You can always check the answers, so many teachers use computers to let the student self assess.

According to Bloom's Taxonomy -Application; technology can help with making graphs, tables which can solve problems through sequencing, classifying and organizing information on charts. Formulated methods should measure achievements on Regent exams based on needs of our students. Figure 2 represents the parabola graph used to show functions could contrast grades to make grades equivalent, in proportion to the percentage from 100% to grade on the curve.

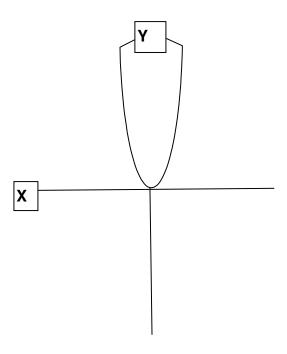
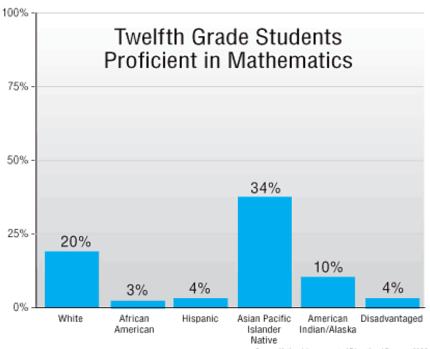


Figure 2: Parabola Y=X2/4P

From 1982-1999, 17 year olds were moderately proficient in math with developing reasoning, understanding number systems, compute percents, identify geometric figures, measure perimeter and areas of rectangles, familiar with inequalities, evaluate and solve linear equation, find averages, make decisions from data given graphs and have developed the skill to operate with exponents, signed



Source: National Assessment of Educational Progress 2000

Figure 3: Twelfth Graders Proficient in Math by Ethnicity²
Numbers and square roots(NAEP, 1977-01).

Figure 3 is a correlation based on math Scores from ethnic Groups, an example of the technology plan implementation.

The Asian culture is functioning in math on a higher level.

This is not because of the amount of population, but higher educational values. Negative attitudes about technology are hindering success in math in New York City Schools.

Mill, R. (2002, p.4) states: "While passage rated on the State's Regents exams have increased since 1995; fewer than 50 percent of city students passed even the challenging exams." This is an example that reflects lack of instruction.

Today, students are fascinated by television, like the internet, they are spending long hours viewing television and abstracting illicit programs, making the internet another vehicle to satisfy their interest. Students can apply TLITP to build on previous learning for Math Regents and higher order thinking. Higher-level learners will achieve, as well as behind learners. (Meier, D., Wood, D., 1986). An informational system like having an encyclopedia readily available will generate motivation.

²Toward a new golden age in American education how the internet, the law and today's students are revolutionizing expectations. P.17 figure 3. Washington, D.C.: National Assessment for Student Progress.

The NCTM Principles and Standards for School Mathematics Communication (2001):

Students from K-12 should be able to organize, communicate, analyze, and express mathematical ideas precisely:

Organize and consolidate their mathematical thinking through communication: Communicate their mathematical thinking coherently and clearly to peers, teachers, and others: Analyze and evaluate the mathematical thinking and strategies of others: Use the language of mathematics to express ideas precisely. The new digital age in society demands fluency using technology.

Professional development standards include math technology for teachers to teach and learn the relevance of time in the lesson to incorporate computer software and calculators in the lesson. Technology introduced in the beginning of the lesson gives clear expectations and a focus. Now Curriculums integrate technology into math lessons to enhance and reinforce the learning process. Similar arguments directed learning strategies should meet the needs of the student (NSDC, 2001). There should be a balance in the overall program that incorporates a variety of lesson types, such as the problem-based lessons as well as mini lessons, games, and mental math using three approaches to math instruction (guided, shared, and

independent) interwoven throughout a balanced mathematics'
program.

Technology a learning tool should corporate into academics, not merely fascination. In comprehensive educational plans, teachers implement technology and methods into the curriculum. One way teachers incorporate technology is to use it in math lesson plans. Non-linear web quests usage is to learn the language of mathematics. The old-fashioned word wall projecting on a white screen is an interactive lesson. Preparing quizzes that match the word definitions with applause or other recognition of the right answer familiarizes students with math vocabulary as an ongoing interaction piece to include in future lessons. According to Fountas and Pinnell, (1998) there are different types of writing in mathematics, such as autobiographical, narrative procedure (stating the math problem in words and steps how to solve the problem-met cognitive), conceptual, reports/essays (mathematicians, historical, research), projects, creative, portfolio, reflective journals. Similar ideas discuss the student's uses of the graphic organizer to organize thoughts and ideas; they can then elaborate and construct knowledge, which will clarify the concept. (Richbart, C., Richbart, L., 2001). Students as curious thinkers enthusiastically will

naturally make mathematical sense of the world around them using organizers.

When teaching geometry graphics help students visualize and draw diagrams that will help them to justify conclusions (NCTM 2000). Projects such as web-based projects create web quest that allows students to inquire and discover things they do not know and gives the student visual and audible accounts to refer to something he or she has learned. Teachers can apply TLITP for educational projects and higher order thinking skills. As a teacher motivates the student, he/she becomes interested.

Technology is interesting when the implementation gives students independence to self assess and to teach others by peer tutoring.

Various measures of Professional Development are useful for peer tutoring and one teacher to another teacher. In a similar study, Woodward, J, Cuban, L. (2001) Professional Development standards include teacher preparation programs to develop teaching standards for assessments of successful teaching and technological records. Technology should not be just a device that has given a set of instructions, but a resourceful tool for learning and the output to be successful accomplishments.

In the TLITP, students can learn in a less restricted setting with a computer. This would allow them opportunities to explore discoveries by using concept maps to delineate their focus to math. The concept would map out instruction and the operations to use. The stronger the student's connection the higher their understanding will be. (Hiebert and Carpenter 1992). Another name for concept maps is graphic organizers, a comprehension tool used along with software, such as Inspirations. An example of a visual/structural organizer can be made on the computer, such as KWL charts; what I Know? What I learned? What I want to know, a brainstorm web; a circle of ideas that come to mind when you think about the topic, a Venn diagram and other objects for mathematical expression.

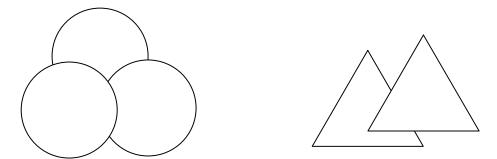


Figure 4. Overlapping circles and triangles represent a Venn diagram.

Venn diagrams generally compare and contrast thoughts and facts about a topic using a process of elimination to

clarify concepts. Concept maps should transmit information to the students. Connections that are visual organizers help students construct understandings of the concept (Brinkmann, A., 2003). Math Rubrics base grades with Clear expectations:

Explanation	Use of	Mechanics	Demonstrated	Requirements	Counter
	Visual		Knowledge		Examples
Gives a	Clear	Without	Shows	Go beyond	Includes
complete	diagram	math	complete	the	counter
response	or sketch	errors.	comprehension	requirements	examples.
with a	with some		of the	of the	
detailed			questions,	problem.	
explanation.			mathematical		
			ideas, and		
			processes.		

Table 8 Math Rubric

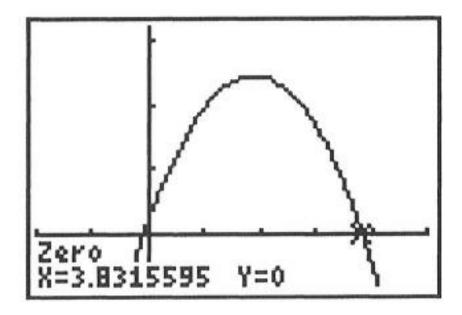


Figure 5

Math calculators are essential for Math A exams, but who can get the answer right without knowing how the TI83 works, if you type in x square you get a shape see figure 5.3 Figure 5 graph on the calculator when X2 put in the calculator's data, the value of y1= to X square and x=zero. By using the variables x=Teacher and y= Student, see figure 6 the slope

³Laughbaum, E. (2003, fall). Hand-held graphing technology in the developmental algebra curriculum. Mathematics and Comp r Education, 37(3).figures 4&5 Retrieved Nov 13, 2005, from http://rdas-proxy.mercy.edu:2103/pqdweb?did=4827391&sid=10&Fmt=4&clientld=10766&RQT=309&VNa me=PQD. ute

Graph is used on a Texas Instrument 83 (T83) and has

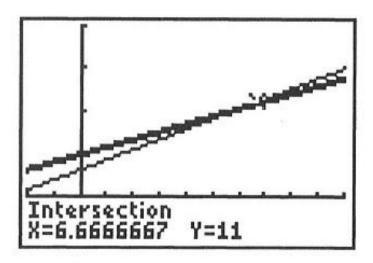


Figure 6

multiple uses.⁴ An intersection could show the relationship of teacher training satisfaction to student achievements on math regent exams, a progression of one variable to another. Organized visual evidence of practice test associated with regent exams, such as Baron's Regents Study Guide and the EMS for teachers is available over the internet helps to prepare students for regents.

Statistics for students in the two high schools regent's Scores: Hempstead High School

2002	21%

⁴ Ibid

-

2003	28%
2004	57%

Table 4 Mathematics A

The state average for Mathematics A was 81% in 2004.

The state average for mathematics B was 76% in 2004.

2002	21%
2003	33%

Table 5: Sequential Mathematics, Course III

The state average for Sequential Mathematics, Course III was 50% in 2004.

Martin Van Buren High School:

2002	41%

Table 6 Math A

the state average for Mathematics A was 81% in 2004.

Mathematics B

The state average for Mathematics B was 76% in 2004

2002	68%
2003	45%

Table 7 Sequential Mathematics, Course III

The state average for Sequential Mathematics, Course III was 50% in 2004. Graduates lacked basic skills and not prepared for employment. (Brodinsky, B.1977). Seventy percent of the students taking Regents exams failed in 2003, Compared to school's Regents exams 2003 June exams had low percentage passing statewide.

LTARP Integration

The vertex of the TLARP (Technology Learning Action Research Process) diagram represents three constructions student, teacher and school culture and transforming of ideas, the epistemology construct which was transformation will now become transitions of transmitting information through TLITP (Teaching and Learning Information Technology Process). The diagram represents three constructions student, teacher and community and transition transmission information by TLITP. Technology being put into force by the education system and is presented to staff through professional development activities. Community school comes into place through organizations associated with the school's population and the staff who are participants. The interaction of the construction can be applicable as an ongoing process.

X	Т	S	С
Т	TT	TS	TC
S	ST	SS	SC
С	СТ	CS	CC

Table 8: Formulated Construction

Table 8 is showing the possible formulas that can occur between the teacher, student and the community (T=Teacher, C=Community, S=Student). An example of transmissions is an idea transited through communication, such as, on line opportunities for youth partnership after school education and Grassroots are responsible for some community organizations and status quo in the community. As three-dimensional, its uniqueness is being an ongoing process. Figure 7 shows a constructive model of the possible interactions of the three constructs.

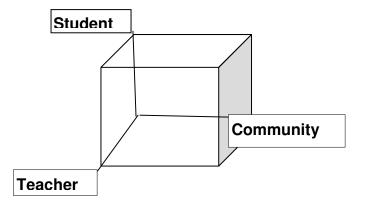


Figure 7 is Communications of the Three Constructs.

Teachers Select appropriate material to engage students and provide opportunities for problem solving. This allows the teacher to sequence math topics. As facilitator, the teacher introduces the method as invented and for discovery. Assisting struggling students allows the teacher and student to articulate and have efficient recording techniques. The teacher's authority respects students as mathematicians and develops an atmosphere of respect and community. A teacher composes questions for a deeper mathematical understanding, respects the student for his/her effort and models how to learn from other's ideas.

Mathematical notation introduced in a concrete context builds on student's prior knowledge and increases the student's usage of the mathematical language. A teacher monitors students for equity and involves all students in the learning process. Using technology makes the student responsible for their work. While the teacher is facilitating, students are solving their own problems. The environment's structure has a lot do with building of

knowledge when all students have an active role.

Structured technology activity enables better management. A similar study by the National Council of Teachers of Mathematics (2000), questioning is good to help students discover and help you substantiate their needs for improvement. They will experience mathematics as a creative and interesting, through challenging endeavors.

These interactions: teacher-teacher, teacher-student, teacher-community, student-teacher, student-student, student-community, community-teacher, community-student, and community-community are examples of infusion of technology in the curriculum with quantities of the formula that represent the possible interactions. A foundation for discovery of a qualitative scaffold so students can develop allowing teacher to prepare extended lessons based on prior experience. This is a tendency used for disadvantaged as well as helps the Many Children Left Behind. NO Child Left Behind (NCLB), because it gives teachers an opportunity to understand situations, which they will encounter as educators.

Growing and learning about TLITP, despite life changes is necessary to equip teachers for positive accomplishments. Social constructivism makes skills more relevant to student's background and experiences anchoring

learning tasks in visual situations. Self instructional sequences that are achieved by upgrading the schools system is in collaboration with professional development so teachers, students and community will benefit from curriculum planning topics that interest them. Using student technology standards, group projects can promote motivation. When students communicate with one another, it helps support classroom structure. Students engage more when other students doing the same activity influence them, it enhances the learning process.

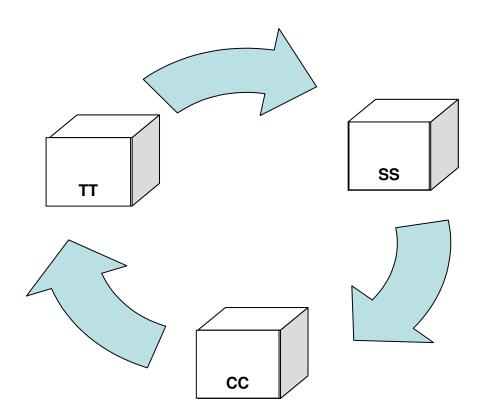


Figure 8 an on-going Process of Communication between the Three Constructs.

Figure 8 shows inaction of the interactions of student-tostudent, teacher-to-teacher and community to community.

Interactions evolve occurring on a daily bases. All three
variables are interacting, changing methods, Monday through
Friday learning fundamental lesson plans. Students benefit
by developing communication, flexibility, connections,
sense of mathematics, and thinking skills. Figure 9 being
student centered a lesson given on day one may include
cooperative learning strategies that involve student-tostudent interactions.

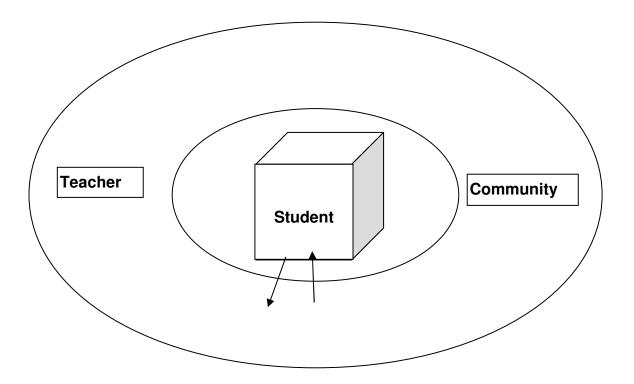


Figure 9: Student Centered

Day 2 can be teacher to student being teacher directed, day 3 would be communicating on discussion boards and online assignments, day 4 group projects as an example of community to student, and day 5 assessments; peer, self and teacher. These are the same influences that motivate recreational activities such as games, exercise equipment, and telecommunications used with learning in the school community. It is the responsibility of the parents, teachers, and administrators to get information about what technology to use with learning. Many after-school programs and homework help programs are available for children who are in need such as Dial-a-Teacher.

The Clinton administration technology policies report (1996 p.2) introduced integration of technology into school districts to strengthen K-12 education. Decisions' deducing which purchases would be most beneficial to students relies on ideas, which foster the needs of the students. Teachers who take into account the needs of their children in their classes are able to motivate the children's interest. Keeping running records, journals and assessment results will reflect upon what technology support used in the area of instruction. Teachers can keep a profile of their students to measure strengths and weaknesses. Teachers should have access to a computer lab

wired to the internet so they can have their record keeping available online.

All students including special education and English language learners should be able to use technology systems to access telecommunications and publishing, because technology promotes creativity, problem solving and decision-making, using computers and websites. Students should be encouraged to read and research topics that interest them with supervision. Some students given an IEP (Individual Education Plan) that describes long and shortterm goals prescribed by the SBST (School Based Support Team) for the child for the year with the help of technological strategies and devices students can function 100%. Students can work independently or in small groups. Students need to identify the implemented study plan, being able to choose from programs and services made available to enhance instruction-using technology. Technology can be an independent exercise in an assignment where students can self assess and teach other students. For example, a student who once needed a scribe to take notes can now use a hand held palm pilot word processor or a laptop to take notes. This makes the student independent. Student's independence is the actual self-sustaining academic

accomplishments achieved and is able to carry on to other levels of knowledge.

The learning stages with technology have been a slow Computers have prompted some change of course that the structures and cultures have altered what the teachers do with machines. (Cuban, L. 1986) The emergence of education and scientific quantification measuring new world reality has been based on economics, education's ideas and educational program's information and communication has led us Toward a Golden Age in American Education. Growing and learning students exposed to technology are learning to use informational materials which affect their achievement on the New York State Regent Exams required for high school students. TLITP as an emergence in education was once the transforming of ideas, thanks to TLITP teachers, administrators and school communities can enhance productive math teaching and learning to improve math scores. TLITP will show how desired achievement can emerge in ways that the teacher, student and the school community interact through ongoing opportunities that are accessible to them.

There are many informational systems online; lesson plans, web quest other teachers have completed, video conferencing, networking with other teachers in other

schools, e-mail, pen pals, Scholastic News, Weekly Reader, New York Times, events, contest, games, multimedia programs, e-learning, etc., teachers can integrate into their lessons(Woodward, 2006). One of the advantages is letting the computer do the footwork for you. Another advantage is that multimedia gives visual accounts, which has motion and is an interesting presentation. Students will be able to learn more details and this helps the teacher assess students with more confidence given an opportunity to learn what they need to know. Teachers can give more information about a topic, such as math regents, it is visual and at the same time written answers can be requested from students.

The study of on-line discussion boards gives examples of how technology is integrated: Tests of Between-Subjects
Effects for Students' Usage of Technology and Students:
Individual Differences: Students' grades determined an average of three exams and one project. As students use of technology increased, very little difference found in course performance, while students who used the internet more than 16 hours a week performed better in the course.
As student's use of discussion board increased, a little difference in course performance by the students who used the internet. Regardless of internet experience, students

learned more by using technology as a learning tool. (Krentler, K., Willis-Flurry, L., 2005). There are online discussion boards at the EMS to discuss regent exams.

Math achievement is improving slightly, but needs much more work to ensure that our children receive a sound background in mathematics. Using student information analyzes participation of information technology facts, such as community and after school programs, 4-h clubs, YMCA and other programs, to interpret the type of interactions that go on between the community, school, teachers and students. Creating the practice and making up strategies to use prepares teachers in professional development to practice a strategy in a given situation. One of the problems is not enough funds is being spent on learning techniques and education of technology usage more emphasis is being put on the manual use of the machinery (Sculley, 1989). Student technology standards number one⁵ In successful usage of Technology TLITP will utilize interactions of the three constructs teacher, student, and community on an ongoing basis. Learning centers facilitate learning modules to create activities in technology, such as software for projects, power point, excel, Claris, etc.

⁵ Fundamental operations and concepts students understand the operation of function of technology system and are proficient in the use of technology. IST. (2004). National educational technology standards for students. NETS,

Teacher-web and Lesson-mania make assignments more interactive and motivating with teacher and student.

After the cold war, 1945-1989 new technology became significant. Now we live in a digitalized society, which runs multicultural mass media. We as educators should try to target different ways out students learn for example web TV an online learning experience available on internet TLITP is a multi-learning plan that is three television. dimensional, unlike prior innovations constructive foundations of transmitting information between teacher and student and the community. It is very important that TLITP uses are available and the needs of using it effectively gained through practice using it. Adequate resources when used correctly are accountable so teachers can do their jobs well. This means money to have good teachers, to ensure continuous professional development, and to provide books. According to Monty Neil (2003, p.225-26) technology and supplies should be in a comfortable clean and hospitable environment so all children receive an equitable opportunity to learn. Learning facilities should accommodate their environment. Elementary, Junior High and High School students should be in a nurturing atmosphere that supplies food for thought. After the Brown vs. the Board of Education, rural schools

lost vast numbers of students and new urban schools became overcrowded. Children in society quickly reflected by the schools as the population and the schools became more decentralized. (Meier, D., Wood, D.1986). Today with the expanding population, schools are equipped to have fewer students per teacher, so educators have the comfort and ease of teaching without overcrowding.

(1984 pg.3-12), J. Willis wrote, Skinner believes that teaching machines is destined to revolutionize the educational system and that in a few years they will supplant largely the use of teachers. On the other hand, Larry Cuban discusses the use of instructional TV from 1954-1983 comparing the former years of transforming information of technology to the present of transiting transmissions of ideas by way telecommunication.

The child in a ready-made form has to undergo a certain development to assimilate Vygotsky's principles of the constructivism concepts. Investigation skills leads to learning vary whole class teaching with small groups and one on one teaching so you provide opportunities for children to learn with your support, slowly nudging them to independence. This would be an example of a constructivist using technology in the classroom for

social and collaborative activities for curriculum and lesson planning, to learn socially and to relate out of school experience. Certainly, computer technology is becoming more demanding in the classroom for students to increase their learning abilities. Computers can motivate student's interest, by internet access to online discussions with other students, educators and professionals. Teachers can share their reflections to other teaching colleagues in the form of video conferencing or e-mail, etc. (Woodward, 2006). If the student has experienced multiple years of failure they can try again. The constructivist perspective addresses a variety of ideas to conduct constructive lessons.

In Piaget's social and cognitive constructivism differs when a cognitive approach is individual pacing especially when engaging in motivational activities that require high-level skills. Social constructivism would be preparing skills from a lower level. It is important to get to know your students and find out how they learn.

Ask them how do you learn what is it that makes them get interested in knowledge. Give information, display it, but if the students are not interested there is not any need to teach it. We have to go back to the primitive and ask ourselves one precise very simple basic question. When

we know how our students learn then we can say we are teaching. One question to ask students before beginning a math lesson is how do they like math? See table 9.

In General My Students:

Are easy to motivate

Are hard to motivate

Table9. Math Tally

Then ask students where they would put themselves on this graph.

Lack of resources decreases student achievement, because teachers do not have the supplies or professional development they need to deliver appropriate technology instruction. Motivation intention comes with multiple intellects and student taught lessons, which they are interested before you, start the lesson. By enjoying your experience, the children will too.

Integrated technology lessons need a connection to the curriculum. Setting goals are important in collaborating

ideas long and short-term goal accomplishments and introducing a rubric to show clear examples, as a quideline. Timelines are significant for all parts of your project. Having a schedule makes it easy to assess activities and events, as they happen to substantiate the student's needs for further lessons. Clear expectations are examples, such as jobs each student in the group accepts. With all students involved each one has a chance to experience a job and identify his or her strengths and weaknesses. Collaborating ideas through team teaching methods or communicating between staff is a necessary factor to test your plan, it is easy to overlook common errors. Evaluation does not have to be at the end of the assignment. To make your experience more culminating an evaluation of the website you will use should carry you on to assessing yourself and your lesson to make notes for the future. Be ready for the unexpected and discrepant events with a note pad to record your reflections. Technology should be an experience you love and have fun teaching and learning. This is true when students like math.

Some disadvantages you may come across when networking with other teachers you really do not have a visual account although with the use of digital lens the other

person can see the person sending the message. Sometimes when you do not have time to read, your e-mail will pile up. Other teachers find designs to fit their school's criteria. There is no guarantee that a website is going to be successful learning. There is a possibility if a student leaves the site, they will not come back.

Although there are many learning resources, discussion boards to promote learning, form the online resources you are using with your lesson.

Predictions about Technology in the Future

Technology in the relation to student achievement will play out. Technology has historically played out in this country about the television and inventions, such as the radio. There is always a new system, which, is better than the old one. The lack or inability to accept accomplishments will continue to make achievements slow. Initially technology will promote knowledge overtime and eliminate detrimental outcomes to that same knowledge and awareness. In the design to promote, computers can be

helpful, but they can promote dependencies and ultimately become derogatory to the goal it is trying to accomplish without the proper training. The dependency activates when the instructor does not allow the student time to explore and discover independently. Some other relevant usage of computer viruses discoveries should be helpful instead of harmful to our computers. Behaviors observed in students in reference to technology in particularly they are excited about implementation, it enables them to play video games, they enjoy playing, but once things cross over into the genre of education, that excitement deteriorates over time. They do not maintain that same level of excitement. The usage of technology becomes increasingly more educational when its design to entertain and motivate becomes less detrimental to the educational process.

The problem is that society has split between class and economics and the need to have an equal equity in education has become prevalent to the outcomes of learning. An urban instructional technology and not enough of it to render positive outcomes, verses suburbia's possesses the tool and not enough encouraging strategies to use it. These issues have an effect on technology use and children. They learn what is modeled and in this case unproductive, because of the process teachers and administrators use.

Instead of technology integrated, it is prejudiced into levels of understanding. This totally separates the design of the intention to promote mathematical success, and contributes to more problems of technology taken out of the order in which its understanding. The funding of suburban school's technology funded through property taxes still leaves the inner city schools suffering from lack of funds to afford cost of important instruction in professional development and computer classes vital to the success of technology learning.

Out of 53,013 children, 9,277 are in poverty 75.2 out of 80.7 percent use computers at school. 32.4 use word processing; 17.2 out of 45.6 connect to the school; 31.9 out of 65.2 use computers at home; 12.5 use the internet; 12.1 out of 34.4 send and receive e-mail, 20.1 out of 44.2 complete school assignments and 28.7 out of 59.2 play games (NCES,2004-014). These examples depend on the amount of children not in poverty.

Computers initially were for the classroom. A substitution of a laptop is to suffice the need of technological aspect in the curriculum. Some teachers have experienced viruses making mobile laptops more for word processing rather than software, which promotes learning. Students can explore and discover means to interpret other

communications using technology learning and relating what they have learned to other subjects, including new information found out about a subject over the internet.

What is the relationship between technology use and student achievement? The relationship between technology and achievement is functional as long as there is positive interest. A teacher can motivate a student who is interested in the implementation of computers.

You can expect to see a decrease in the level of achievement initially when students are excited about a new experience. Overtime they can achieve and reflect positive actions. Addictions that control thus can inhibit achievement, desensitize human consciousness and self-awareness. To alleviate this problem would use technology as a tool.

Too much of anything is no good. If watching T.V. instead of studying for a test, there is failure. There is a need for TLITP to allow the student to be at the center and more self-assessable. Stop technology becoming harmful to children. Follow precautions, such as the computer is eye level and you can see everyone, using etiquette when corresponding over the internet, making sure the room is well lighted, never arranging to meet strangers, (if it is a must have an adult accompany you (teacher or parent).

Using technology can be entertaining and enjoyable while learning.

Student's achievements depend on the teacher's efforts to motivate their lessons. A motivational activity given prior to a lesson is a means to introduce what you will teach. Examples of motivations are eye-catching photos, visual literacy helping students captivate the focus of There are visual learners opposed to auditory and verbal learners. Asking open-ended questions, using pieces of your assignment, can be more interesting to students in a whole class activity, which captivates the class's attention. This is why it is important to evaluate websites to ensure tailored lessons to your students abilities. Overtime when the excitement learning has deteriorated, the design to entertain becomes more educational it will decrease technology playing out.

Organizations that work well with the student population to get high school students ready for the transition to work after they graduate from 12th grade, such as the Department of Labor have a website for youth to investigate the ones that are suitable for their needs. Several levels of social influence include family structures of opportunity and normative, evaluative and informational systems within networks of adults and peers

in the school and the community. Besides these internal influences, multiple levels of external structure are also involved. Both schools and neighborhoods are important structures that have causal efficacy in the educational process independent of individual level processes. One cannot work without the other.

In the early 60's United States cities were beginning to deteriorate the number of community development corporations for nonprofit fell very low in the late 60's. Recreation centers intended for community development to be collaborated through the schools, so students who attend a school in an area can go to a community center (Rigsby, 1993). Some of the centers affiliated with the school, such as the Beacon, require students obtain a certain level of achievement to attend. Other programs that have been involved through the schools in the last twenty five years have been through grants or other nonprofit agencies to benefit youth.

Integrating technology with the school community can enhance academic achievement. Technology helps bring together ideas from school into the community, for example, Dial-a-Teacher a form of telecommunication has been available since the 80's for assistance to students having trouble with their homework. Many on line degree programs

are available for continuing education, which was not available in the past.

Methodology

The research procedures used gives surveys to five High Schools, two Junior High Schools and two community school programs. Charted percentages discuss to analyze the number of students. After contrasting similar information collected data compiled and final results based on given information verses national averages.

Ninety-six percent say that doing well in school is important to their lives

Ninety-four percent say they plan to continue their education after high school. (Horatio, A.2003)

Ninety-four percent of online teens use the internet for school-related research. (Lenhart, A, Simon, M., Graziano, M.2001)⁶

Ninety percent of children between ages 5and 17 use computers. (NCES, 2003)

Eighty-eight percent say going to college is critical. Seventy-six percent want to learn more about the world.

⁶Lenhart, A. Simon, M. Graziano The Internet and Education: Findings of the Pew Internet & American Life Project (Washington, D. C.: Pew Internet & American Life Project, 2001)

Seventy percent participate in community service or volunteer work.

Forty-nine percent say they may be interested in pursuing a career in technology

Forty-seven percent in business, forty-one percent in medicine, thirty-five percent in law, thirty-four percent in entertainment, and 30% in teaching. (Horatio Alger Association, 2003)⁷

Twenty-eight percent of high school students access foreign news sources via the internet.

Twenty-four percent have created their own web pages. $(NCES, 2003)^8$

Sixteen percent of teens are shareholders in the stock market.

Teens spend more time online using the Internet than watching television. (Harris, 2003) 9

On the scale, there is a higher average of educational values and technology use is at the bottom. Technology has

Us Department of Education, National Center for Education Statistics, Young Children's Access to Computers in the Home and at School in 1999 and 2000 (Washington, D.C. US Department of Education, National Center for Education Statistics 2003)

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⁷Horatio Alger Association, the State of Our Nation's Youth (Alexandria, VA: Horatio Alger Association, 2003).

⁹ Harris Interactive and Teenage Research Unlimited, Born to be wired: The Role of New Media for a Digital Generation—A New Media Landscape Comes of Age. Executive Summary (Sunnyvale, CA Yahoo! And Carat Interactive, 2003)

Value enough to match a car. You can achieve if you take care of the vehicle that takes you where you want to go.

This means you have to use the computer as a tool to achieve more.

Taken from Martin Van Buren High School this survey pertains to future Regents' exams.

- How familiar are you with the newly revised New York
 State Mathematics Standard for commencement-level
 (high school), respectively? Standards to replace Math
 A and B briefed and will be looked at thoroughly.
- How well aligned is your district's mathematics curriculum with the newly revised State' mathematics standard and performance indicators? We are currently following the New York City Standard Curriculum for Math A which began in fall of 2003.
- Have you reviewed the Crosswalk from the current Math
 A and Math B to the proposed Integrated Algebra,
 Geometry, and Algebra 2 & Trigonometry? No.
- How prepared will you be to teach the new Regents mathematics course if the new Integrated Algebra exam were implemented in June 2008? Since mathematics hasn't changed only in the order in which we tech it, the department is ready to implement the new exam.

- How much professional development would you/mathematics teachers in your district need in order to prepare for the implementation of the new Regents Examination in Integrated Algebra were it to first administer in June 2008? A minimum of one hour per month per term.
- How does technology determine the students' achievements in math score? The use of the calculator is an important part of student achievement. There are hopes that every student will have a graphing calculator throughout their mathematics career at our school.
- What do you predict will make higher scores on math tests? The proper alignment of the math curriculum and more available hours for teachers to help students.
- What influence does the internet have on students in to find the best websites to use for math? There are many good sites that can help students surfing. It is important for students.
- What software have you used for math in the past, the present, future? River deep Software, Geometer's Sketchpad, Examgen, Math Wizard.

- What specific steps has your district taken to align its mathematics curriculum with the revised State
 mathematics standard and performance indicators? None
- What best describes the status of your district's professional development to prepare teachers to teach the new Regents mathematics curriculum using technology? In house professional development.
- How well aligned is your district's mathematics curriculum with the newly revised State' mathematics standard and performance indicators? We are currently following the New York City Standard Curriculum for Math A which began in 2003.

Regent's statistics: NG=Not Given

	Jun-	Jan-	Jun-	Jan-	Jun-	Jan-	Jun-	Jan-	Jun-	Jan-
	05	05	04	04	03	03	02	02	01	01
%Passing	82.17	86.31	70.9	60.2	24.6	49.2	28.6	50	50	NG
Math A										
Regents										

%Passing	78.4	20	70.3	NG						
Math B										
Regents										
%Passing	72.19	71.29	71.2	68.8	67.9	77.7	71.9	71.2	69.5	72.25
Math										

Table 10 Regent grades for the past five years.

Survey: Elementary Middle Secondary and Continuing

Education, (2005) What percent of students participate in community service or volunteer work through your in or company? In a study to research Teaching and Learning

Information Technology Process found it pertinent for the success of education today. Data collected from a

Parochial High School and a suburban High School found that 100% participated in community service or volunteer work in or through the school. The High School of

Hempstead measured the same.

Percent of Students who Participate in Community Service or volunteer work

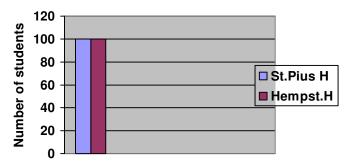


Table 11 shows the percentage of students participating in community service or volunteer work.

How many students use computers? The measurement goes further than measuring to see if the use of technology works or not. Is technology in schools worth the money it costs? Asking questions that have to deal with the students who participate in community centers deemed more accurate, because you have a multicultural source of study from different areas of the city. All of the 190 students at St. Pius used computers and so did all 3000 students in a Union Free suburban school.

Students Who Use Computers

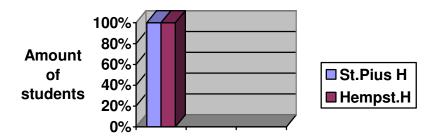


Table 12 shows the percentage of students who use computers.

How many high school students access foreign news sources via the internet? Even though there were no foreign news access in the Parochial school a very small percentage of about 2% accessed foreign news at Hempstead High. The Community center Phi Delta Kappa Sorority Omicron Chapter caters to a male population ages 13-18 who are economically well off, meaning each one has a computer at home and accesses the internet for foreign news. If the information is not of interest this shows the lack of student's inquiry to get foreign news.

Students Who access Foreign News over the Internet

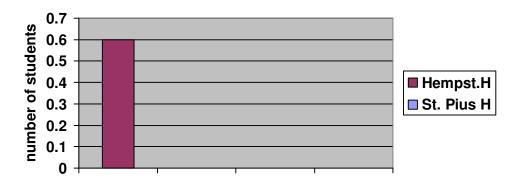


Table 13 shows the number of students who access foreign news on line.

About how many school assignments require internet research? Both schools said about 50%-60% of school assignments required internet research.

Assignments Requiring Internet Use

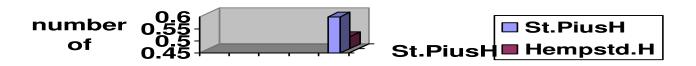


Table 14 shows the amount of students who require the internet.

Data Based on School's Population, How Important it is To Go to College

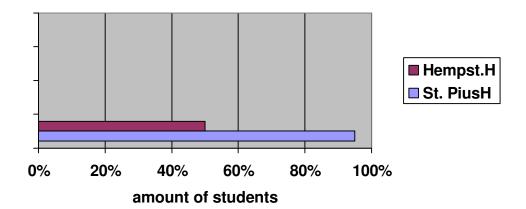


Table15. Percentage of students who go to college

Based on your school's population, how important is it to go to college? Based on your school's population, how important is it to do well in school? The private school exceeded the free suburban school when asked how many

students thought it was important to go to college and how many students think it is important to do well. This is an example of educational values. The students who had more values absolutely thought it important to do well and go to college. Out of the 3000 students only about 2500, that is 75% as to Parochial school's 98%.

Data Based on School's Population, How Important is it To Do Well in School

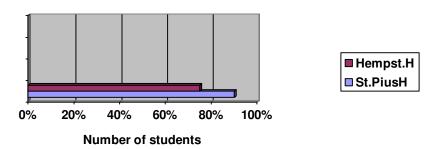


Table16. Percentage of students who think it is important to do well in school.

How does economics play a role in technology? In test where the control group outnumbered the experimental group the results were negative and positive when the experimental group outperformed the control group (Kulik, J.2002). When asked how economics played a role: At St. Pius, limits placed on their ability and at Hempstead High

School, there was not enough encouragement placed on computers being offered to the students.

Students Enrolled in Technology Courses

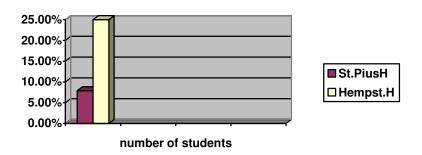


Table 17. Percentage of students enrolled in technology classes.

How many students enrolled in technology courses? In private school, 24 students enrolled in technology courses, out of the population of 190 compared to 750 out of 3000 in suburbia's school.

How many participants enrolled in standard courses?

Students Enrolled in Standard Courses

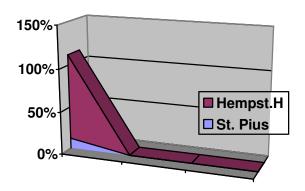


Table 18 Percentage of students enrolled in standard courses.

Approximately 65 of the homes at St. Pius have computers and about 50% of the homes at Hempstead High have computers in them. There is a difference when you are talking about 1500/3000 as to 65/190. Another question referring to classes of student enrollment, Hempstead High School exceeded St. Pius significantly. The difference tells us that the more available it is to practice using technology the higher scores will be. Martin V. Buren an average urban school's averages shows that although the tools of technology are not as fluent as they are in suburbia, the urban High School superseded the math scores on the Regents Exams. The Clinton Administration's technology policies (1996) have contributed to inner city urban schools funding through the ESA for more funds to strengthen K-12 technology education.

Results

After measuring technology's usage in relation to improving student's achievement, findings that technology is appropriate for classroom use as well as professional development. Different use of technology results in different kinds of achievement. In a similar study of

Computers for student, instruction in Elementary and Secondary Schools (2003-2004) public schools totaled 16,605 out of 90,665 schools used computers for instruction. At Martin Van Buren High School, all students have access to computers. Teachers do ask students to use the internet for school assignments at times, but it is not a daily requirement. Although designated areas not used for math technology, a dedicated computer room contributes to students' literacy in math. The faculty relies on in house professional development, always working on improving student performance. Always, it is not the quantity that counts, it the quality. Even though more funds will improve supply amounts, its how you use the technology you have. Scores improved increasingly from 2003. In 2004 the urban school exceeded scores in the suburban school even though suburbia had more access of the tool. Sixty five percent of homes in suburbia's schools have access to computers. In Catholic schools, 1,208 out of 7,974 had computer instruction which equaled in proportion to other schools. The parochial school's scores were higher at 65% which deviated from the suburban school. The Proficiency Test Scores for Selected Subjects by Characteristic, (1977-2001) showed the improvement of math scores are slowly progressing from 1996 after the ESA inaction, scores

improved 6 points compared to previous years of one or two points. This is because of the policy for technology.

When asking the community center Phi Kappa Omicron Chapter about what percentage of students used computers, they said their high school aged students all have computers at home, view school as very important; all students have taken computer classes in the past. When these findings were compared to the school's results, all students in school and the community center were 100% involved in community service or volunteer work. In this case the service contributed to the positive attributes that characterized student's achievement. When there is a difference in proportions by large margins it is likely the achievement on tests are dependent upon the use of the tool. In large quantities tools are not used to suffice shortages and have an effect on higher achievement on Math Regents. Students in general were excited about integrating technology. Overtime prosperous gains can be note. problem results in a lack of technology (graphing calculators) does not permit enough reliability to show a significant affect on student's scores. This year schools received the lowest scores on the Math B Regents. normal distribution all schools received the study proved students can achieve more with the use of a calculator with teacher training. In 2008 Math Regents will eliminate Math A Regent Exams and replace them with integrated math. The Integrated math will consist of algebra and therefore will require more use of a scientific calculator. This research will attempt to prove that more professional development and technology workshops for teachers will attain a comfortable level to teach the new regent exam using technology. How can students pass the regents using calculators if the teachers competency only to ascertain through a certification test where the teachers can not use calculators?

The following survey was given to five schools and one community school; SCRL High School, Albert Einstein JHS 131, Jordan Mott MS 22, Environmental Studies High School, Fort Hamilton High School and Unlimited Tutoring and asked these questions about technology:

- 1. How prepared will you be to teach the new Regents mathematics course if the new Integrated Algebra exam were to be implemented in June 2008?
- 2. How does technology determine the student's achievements in math score?
- 3. What influence does the internet have on students in surfing?

- 4. What software have you used for math in the past, the present, future?
- 5. What best describes the status of your district's professional development to prepare teachers to teach the new Regents mathematics curriculum using technology?

 Unlimited Tutoring responded. They had veteran teachers who worked in the classroom for many years. This strengthened the tutoring service's abilities to improve student achievement. In a small setting, students and teachers in cubicles work on laptops to integrate lessons from Impact Math's website on all levels from K-12.It is not what subject you teach it is the teachers that don'

The use of technology becomes a necessity to capture the student's interest in Algebra and Trigonometry. A program which introduces a foundation of these subjects to reach students, formerly known as lecture and recitation currently refers to coaching attributes to increase the use of technology in the classroom. Using graphing calculators is helpful when the teacher is familiar with the motivation of learning technology.

Qualified teachers do have a significant effect when they have acquired knowledge through professional development and validate experiences for directive foresight. Teachers and parents must be involved for the

student to receive higher scores. If the student does not understand a concept parents can help, if the parent has received professional development of software used in schools transmitted into the home. The internet has a great impact on students. Software such as Impact, Math Wizard, and Geo-math are recommended for students to get the maximum performance from other programs taught. For example word to create work sheets, power point to create lessons, Impact teaches concepts and helps the teacher create assessments like, Examgen and Teacherscape.

Professional development has been ratified to increase academic vigor in mini lessons and classroom culture.

Schools have made Professional Development sessions available to get necessary training. Math teachers align the curriculum with revised state mathematic standard performance indicators. Math A curricular requires use of a graphing calculator during test.

Correlations are based on questions ranked on the number of points the student can earn for each question. The evaluator asks how many students out of 2/3 of their population can answer a question correctly. Predictions imply that a question of the most difficult 1/3 of the population will fail, for example, using the graphing calculator on Math B Regents Exams (Math Bits). By

comparing professional development to the students' scores gives the validity of the learning process.

Technology enhances student's achievement by the percentage of students answering a question correctly.

According to Fort Hamilton High School math department the faculty has professional development twice a month, but does not include technology training. These students received 82% on the Math A and 92% on Math B. The students have calculators but need separate lessons to learn how to use them. Students are encouraged to use regent's web sites at home, but no assignments are given involving internet use. The teachers place student's grades on line which constitutes the high scores.

Teaching and learning mathematical strategies in mathematical reasoning, numbers/numeration, operations, modeling/multiple representation, measurement, uncertainty, and patterns/functions prepare students for the exam. We are measuring assessments of skills needed to pass the Math Regents. Professional development should incorporate teacher training to use technology in math classes. At SCRL, a new school technology is not used and students received a score of 73% on the Math B Regents, Math A is not given. Technology use would have improved scores on calculations.

At Ms 22x and JHS 131 calculator skills are taught to the students two weeks before the test with the purpose to assess the student's knowledge of how to get the answer and explain how they got it. Their professional development consists of two times per month and they use a CD video of their choice of math software and Teacherscape web site. The students are only allowed to use the calculator on part II of the exam which does not consist of mathematical reasoning. This differs from High School. The students are given a minute to do the problem. Plugging in can be done with the calculator.

Looking at specific items on the regent's exam helps get accurate results of student's math proficiency. Depending on how many students answer the question correctly in each category helps measure student achievement. Generally technology standards, the way in which we teach, and the way in which student technology standards are incorporated into lesson plans have an effect on the learning process. With the required use of technology on Math Regents measure reliability and validity based on math proficiency of itemized questions for improvement of scores. Math A and B Regent's questions:

Math A

F	ort	Hamilton	High	Numbers and Numeration:	10
Е	Environ	nmental Stud	ies	30 Which equation illustrates the multiplicative inverse property?	6
L	امه در	shool		(1) 1 • $y = y$ (2) 1 • 0 = 0	

Fort Hamilton Higl	h	10
Albert Einstein JHS		3
Jordan L. Mott JHS		2
Fort Hamilton High	Operations:	5
Environmental Studies High School	9 The size of a certain type of molecule is 0.00009078 inch. If this number is expressed as 9.078×10^n , what is the value of n ?	13
Albert Einstein JHS	(1) -5 (3) -8 (2) 5 (4) 8	7
Jordan L. Mott JHS	(2) 3 (4) 6	5
Fort Hamilton High	Measurem 17 A dog is tied with a rope to a stake in the ground. The length of the rope	14
Environmental Studies High School	ent: is 5 yards. What is the area, in square yards, in which the dog can roam? (1) 25π (3) 25	17
Albert Einstein JHS	(2) 10π (4) 20	9
Jordan L. Mott JHS		6
Fort Hamilton High	Mathematical Reasoning:	13
Environmental Studies		13
High School	21 The accompanying Venn diagram shows the results of a survey asking 100 people if they get news by reading newspapers or by watching tele-	3
Albert Einstein JHS	vision. Sources of News	
	What is the probability that a person selected at random from this survey does <i>not</i> claim television as a source of getting the news? (1) $\frac{15}{100}$ (3) $\frac{55}{100}$ (2) $\frac{35}{100}$ (4) $\frac{75}{100}$	
		2
Fort Hamilton High	Uncertainty: 28 A committee of five members is to be randomly selected from a group of	10
Environmental Studies High School	nine freshmen and seven sophomores. Which expression represents the number of different committees of three freshmen and two sophomores	6
Albert Einstein JHS	that can be chosen? (1) 9C3 + 7C2 (3) 16C3 • 16C2 (2) 9C3 • 7C2 (4) 9P3 • 7P2	3
Jordan L. Mott JHS		2
Fort Hamilton High School	Modeling/Multiple Representation:	14
		17
Environmental Studies High School		

Fort	Hamilton	High
Albert	t Einstein JHS	
Jorda	an L. Mott JHS	

Fort Hamilton High	у ₄	10
Environmental Studies High School	*/-///**	6
Albert Einstein JHS		3
Jordan L. Mott JHS	Patterns/Functions:	
	$(1) y < 3 (3) y \delta 3$	
	$y > 3 (4) y \varepsilon 3$	
		2

Math B

SCRL High School	Patterns/functions:	15
Fort Hamilton High	12 In physics class, Eva noticed the pattern shown in the accompanying	13
Environmental Studies High School	Which equation best represents the pattern shown on this oscilloscope? (1) $y = \sin\left(\frac{1}{2}x\right) + 1$ (2) $y = \sin x + 1$ (4) $y = 2\sin\left(-\frac{1}{2}x\right) + 1$	
		17

SCRL High School	Numbers and Numeration:14 The roots of the equation $2 \times 2 - 5 = 0$	7
Fort Hamilton High School	(1) imaginary (2) real, rational, and equal	6
Environmental Studies	(3) real, rational, and unequal(4) real and irrational	
High School		7

SCRL High School		7
SCRL High School	Measurement:15 What is the radian measure of the angle formed by the hands of a clock at 2:00 p.m.?	13
Fort Hamilton High		12
SCRL High School	Modeling/Representation:20 The center of a circle represented by the equation $(x-2)2 + (y+3)2 = 100$	17
Fort Hamilton High School	is located in Quadrant (1) I (3) III (2) II (4) IV	14
Environmental Studies High School		18
SCRL High School	Operations:21 If $f(x) = 5x^2 - 1$ and $g(x) = 3x - 1$, find $g(f(1))$.	7
Fort Hamilton High School		6
Environmental Studies High School		7

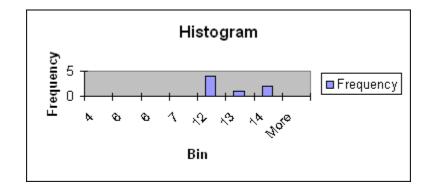
SCRL High School	Uncertainty:25 During a recent survey, students at Franconia College were asked if	10
Fort Hamilton High School	they drink coffee in the morning. The results showed that two-thirds of the students drink coffee in the morning and the remainder do not. What is the probability that of six students selected at random, exactly	4
Environmental Studies High School	two of them drink coffee in the morning? Express your answer as a fraction or as a decimal rounded to four decimal places.	9
SCRL High School	Mathematical Reasoning:	5
Fort Hamilton High		4
Environmental Studies High School	34 Given: parallelogram FLSH, diagonal \overline{FGAS} , $\overline{LG} \perp \overline{FS}$, $\overline{HA} \perp \overline{FS}$	6
	Prove: $\triangle LGS \cong \triangle HAF$	

	Variable 1	Variable 2
Mean	11.85714	8.857143
Variance	3.47619	16.14286
Observations	7	7
Pearson Correlation	0.731032	
Hypothesized Mean Difference	0	
df	6	
t Stat	2.696151	
P(T<=t) one tail	0.017879	
t Critical one-tail	1.94318	
P (T<=t) two-tail	0.035759	
T Critical two-tail	.446912	

This is a T-Test of Fort Hamilton HS Math A and Math B Regent's scores.

The level of significance is higher at Ft. Hamilton High School. Although their math proficiency score was 63.5 (New

York Public Schools-School Matters) they scored 82 on the Math A and 93 on the Math B Regents Exams.



Bin	Frequency
4	0
6	0
6	0
7	0
12	4
13	1
14	2
	0

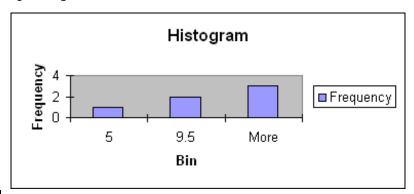
At Fort Hamilton High School the relative frequency
histogram shows most of the scores occurred near the mean

score, with fewer scores falling above the mean and no scores below the mean.

T-Test: Paired Two Sample for Means			
	Variable 1	Variable 2	
Mean	11.42857	11.14286	
Variance	27.61905	25.80952	
Observations	7	7	
Pearson Correlation	0.815084		
Hypothesized Mean Difference	0		
df	6		
t Stat	0.240192		
P(T<=t) one-tail	0.409089		
t Critical one-tail	1.943181		
P(T<=t) two-tail	0.818177		
t Critical two-tail	2.446914		

Although the math proficiency scores were 80.9 at Environmental Studies, the TTest did not show a level of

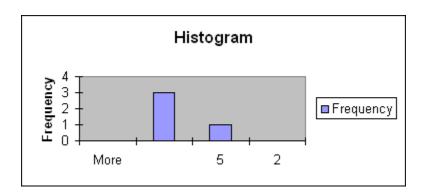
significance. Because of an overlapping range a histogram could not show the frequency of scores.



Bin	Frequency
5	1
9.5	2
More	3

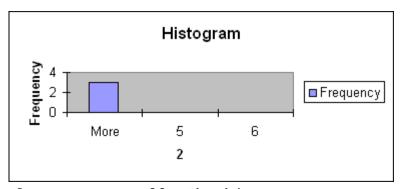
This histogram shows that more of the scores at SCRL High School fell above the mean score and Students received 73 on the Math B Regents. Math A exam was not given, because this is a new school.

	Frequenc		Frequenc
	У		У
		Mor	
2	0	е	#N/A
5	1		3
	3	5	1
Mor			
е	#N/A	2	0



The histogram at Albert Einstein showed a frequency of scores falling above the mean in mathematical reasoning, numbers/numeration, and operations. A few scores fell along the mean and none fell below.

2	Frequency	2	Frequency
5	0	More	3
6	0	5	0
More	3	6	0



This shows the frequency of scores at MX22. The histogram justifies that since they have more instruction in operations, mathematic reasoning, and uncertainty than the other mathematic strategies, there is a higher frequency of scores.

Students achieve more using technology. The Annual yearly percentile is ranked by math proficiency scores. So even if the students did not pass the regents exams do not mean they are low proficient achievers. If they have not acquired all the math foundations in Junior High School, they can plug in the answers without mentally calculating and getting the wrong answer. Students need the use of a

graphing calculator on Math A and Math B Regents. The intention of assessment is not to test how much time it takes to complete an item. It is how you use what you know to manifest. Learning to use the calculator as a learning tool is enough.

Conclusion

Technology enhances student's achievement on Math

Regents Exams despite today's "Win Win" proposition(NCLB)

leave many children behind, meaning that less instructions

of computer learning is becoming evident. Scholarships

offer a general concern for computers initially for use in

the classroom and phases out the practice instead of the

intent. Students are compelled to feel their teachers will

pass even if their scores are not passing. The methodology

of Regents Exams measured constitutes passing grades of 65

to passing with distinction with a score of 85 sets the new

standards. (Regents Exams Standards Setting: The Cut

Scores, 1999)

The amount of questions answered correctly is scored on a curve. The need for further analytical data to determine the amount of achievement responsible for technology's usage shows validity. Addictions of prior learning habits constructed through knowledge have passed on to computers. Vygotsky's principles are not inborn, but conditioned by a

perspective that is encountered through forensic practices that measure reliability.

John P. Bailey (W., 2001 p.4-6) director of the U.S. Department of Education's office of technology when asked would his office be providing technology integration resources for teachers states, "Integration will be a constant theme of our office. So I think you will see that come out in the national technology plan, as well as the long-term study, as well as with the work we do with the different states. Out whole purpose is to really help with that integration, and make sure that student achievement is increasing as a result of that integration." The greatest need in our schools today is video conferencing, to engage in distance learning, management systems to mange academic standards in the curriculum and help for students struggling in math and reading. With every piece of new technology there is a digital divide. It is important for teachers and parents to surf the Internet side by side with their kids so they can be sure they are going to safe places on the internet. In the measure of scientific quantification's two constructs of reliability and validity prove predictions can be measured. For example;

Reliability vs. Validity

John P. Bailey	Predictions
Spiritual	Factual
Social Science	Applied Science

Table 19

Table 19 shows how a reliable source is compared to see how valid an argument is. Effective technology use in the classroom leads to individualized learning putting less emphasis on large-group instruction. Students work in small groups or alone using technology. As students spend more time learning with computers the fewer teachers instructed. Roles change from lecturer to coach. Students construct knowledge with hands on, fact finding research. "It is not what you have it is how you use it". Using technology along with academics works like a T-E-A-M (together everyone achieves more)!

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"It is not what you have its how you use it". Using technology along with academics works like a T-E-A-M (together everyone achieves more)!

Reflection

I learned a lot from this class and research action. I think I'll be using this process in my future career. I didn't think I would be able to write a thesis, but you made it less difficult. I thought I wouldn't have the words to say, but you made me realize the survey would help me find the words. I enjoyed interviewing with the teachers and I think they really learned a lot also. I gave them their results scores they didn't know their student's proficiency levels or how they had done on each category of the Math A and Math B Regent's Exam. All this was possible, because you are a good teacher and you made me be a good teacher!